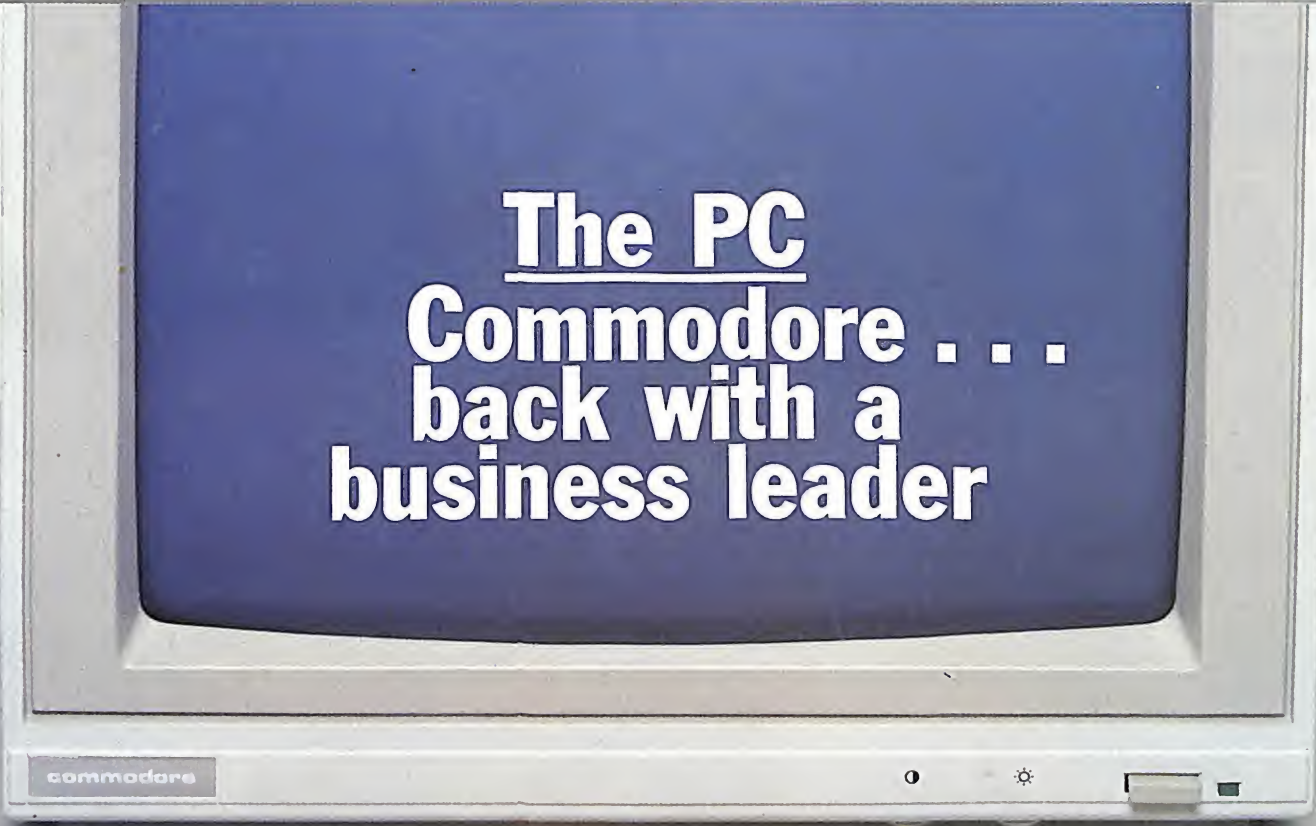


COMMODORE

BUSINESS MAGAZINE

JULY 1985



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back with a
business leader

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the Commodore PC10 . . .
What PC you need . . . and
what you can get . . .
How much to pay . . . and how
to pay it cost effectively . . .
Whatever you need to
know on PC's . . .

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and much more
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business

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COMMODORE

BUSINESS MAGAZINE JULY 1985

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New PC opens comms doors

The significant step up in communications that the new Commodore PC gives over existing Commodore machines is shown in a new product that allows communications with mainframes.

The Perch range of communications emulation software is now available on the

new PC for communicating to ICL, IBM and Burroughs mainframes. Perch allows both batch and interactive sessions to run concurrently. It is fully menu-driven and gives a choice of line speeds, depending on the use. Connections can be either local or remote. Prices start at £400.

Sussex-based Mator Systems Ltd, which offer the Perch systems, also have a hard disk version that allows Perch to be loaded onto and run from a hard disk.

Contact: Mator Systems Ltd, Kingsway House, 134-140 Church Road, Hove, Sussex BN3 2DL. Tel: 0273 726464/7.

driven set up. All hardware is British Telecom approved. An internal buffer takes some of the overflow of information and an interface controls the modem's functions.

The user first defines parameters such as the number to be dialled, automatic log-on and automatic log-off and the type of service required such as viewdata or teletype access. Once connected, the user can send or receive files through the teletype service or viewdata files can be stored to disk or printed out. In the case of the latter, the user can select display modes to properly display the colours of a viewdata page, which the IBM colour card cannot do. The same thing can be done with files that have been stored onto disk even though the computer is off-line.

Missing Link allows CCITT V.21 300/300 and V.23 1200/75, 75/1200 full duplex with selectable error detection and correction protocols.

Contact: PC Communications Ltd, Business and Technology Centre, Bessemer Drive, Stevenage, Herts SG1 2DX. Tel: 0438 316561.

Star printer for CBM PC

A PC compatible dot-matrix printer is now available from Star Micronics, an American company that recently opened offices in the UK to market and distribute its printer and other computer peripherals.

The SR-15 runs at up to 200 characters per second with near letter quality using a new font. Column width is 132 and it has automatic single sheet paper setting and an internal tractor feed. A range of character sets and fonts allows international characters, italics and proportional spacing.

Retail price is £589.

Contact: Star Micronics UK Ltd, Craven House, 40 Uxbridge Road, London W5. Tel: 01-840 1800.



The PC10 and PC20 give each other a long, hard look as they are seen together in public for the very first time, exclusively to CCI.

Modem on PC card

A simple card called The Missing Link is the key to access to most viewdata, electronic mail and database systems from PC compatible computers.

Requiring no external modem or additional software or cards, the modem card fits into one of the expansion slots at the rear of the Commodore PC and is run by a software program with a tree-structured menu-

CONTRIBUTORS

Viola G Gienger	Handic Software	2
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Back row K12R4, KX1212, KX1213. Front row K12SV3, K12R3PC. Optional 'tilt and swivel' stand shown with certain models.

Taxan offer you best-selling monitors for the best-selling PCs

Small wonder that more business users in Britain prefer Taxan to any other range of IBM PC compatible monitors.

Because for style and performance at the right price, Taxan 12 inch monitors are very hard to beat indeed.

The KX1212/3 PC monochrome monitors, for example, give you a choice of Green or Amber display, more than 20MHz Video bandwidth, the very latest non-glare flat tubes for easy viewing and come fitted with video lead and connector.

Or if you're going for colour, there's the new K12R3PC+ (Vision PC+). A high resolution RGB monitor that offers 80-column text display and is ideal for computer graphics. It also features a text mode switch for conversion to monochrome display.

Then there's the Super Vision IV K12R4. A super-high resolution monitor with text mode switch. Ideal for hi-res graphics and with superb text display. The perfect display for the Persyst BoB, STB Super Res 400 and Taxan KIF3800 high resolution adapter boards.

Both Vision monitors are housed in a cabinet designed

to complement the PC and come supplied with RGB lead and connector.

Finally there's the K12SV3 (Super Vision III), the 12 inch high resolution RGB colour monitor with monochrome text modes in Green, Amber or White Reverse. Super Vision III is fully compatible with the PC and most micros with an RGB output.

Taxan also offer a range of monochrome and colour display boards for the PC.

The Taxan range of PC compatible monochrome monitors retail from around £149 (plus VAT) for the KX1212PC and colour monitors from around £429 (plus VAT) for the K12SV3.

Ring us on Ascot (0990) 28921 for the name of your nearest dealer. And find out for yourself why more people buy Taxan than any other monitor in the country.



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THE P.C.

Probably no development in the business world, since the telephone, has created quite so much excitement and indeed uncertainty — as the Personal Computer, the PC. The name itself adds to the interest and the confusion. For the PC is not really a personal computer but a powerful business computer. Its introduction meant that for the first time individual technical managers and 'professional' people could get to grips personally with the benefits of the computer age.

While just a few years ago, the idea of a business computer that you could fit on a desk top would have seemed like a fantasy, today a very fast-growing number of business and professional people are finding they can use a PC to multiply their own and their staff's efficiency — and, of course, job satisfaction by reducing repetition, routine, and time consuming work. There are already thought to be some 200,000 PC's in use in the UK alone and the forecast is that over the next 12 months that figure will *double*.

A PC is not, of course, a huge number crunching mainframe dealing with millions of operations per second. It is designed to help with such operations as invoicing and stock control, budgeting, monitoring and analysing financial performance and results.

A PC will calculate salaries and print out payslips. It can store names and addresses of customers and suppliers; archive files and business letters; and print-out personalised letters in reply. It can help with production and work schedules. It can store technical drawings and plans and modify and update them.

On a PC, you can store and process substantial amounts of information. You can use it as an intelligent terminal. You can have it stand alone or build it in as part of a network. It also has the ability to increase its storage capacity and functions as your requirements change or grow.

And what is more, it can transmit all the detail it holds to other micro computers or to mainframes. Very importantly, it is

backed by a growing library of useful, cheap programs that covers almost every purpose any business person or professional could need.

However, perhaps the greatest single customer benefit is that the PC, though a highly sophisticated operational, managerial and educational tool *needs no special skills to operate*. Perhaps the most important contribution IBM, the creators of the original PC, made to the development of microcomputers was to take away the high-tech data processing department mystique and make professional computer power easily accessible to everyone.

When IBM introduced the first PC in 1981, even they could not have anticipated how quickly the machine would become recognised as the first really universal business computer. MS-DOS — the overall PC operating system — has made it possible for there to become available a whole new world of software. Spreadsheet, accounting, database management and word processing — complex in function but user-friendly in structure and operation — have entered into everyday use in organizations that before did not even possess a computer.

The key to this extraordinary growth has not been the IBM PC but the IBM PC compatible. The machine that offers the chance to run all the programs written for the IBM PC — but that now costs considerably less. It is predicted that 1985 is the year when IBM's own influence on the field may well be noticeably reduced. One reason is that the rate of change in PC technology is fast-moving and IBM is by no means at the leading edge. Another is that the need for the moral support of buying IBM just for its name is reduced as the PC machine becomes more understood and a recognised part of everyday office equipment.

With 16 bit machines, like Commodore's new PC10 and PC20, providing equal or better facilities to IBM's and at substantially lower cost, it is strongly forecast that while IBM may retain its pre-eminent position in selling to large organisations,

How many Commodore home computer owners, when faced with buying a printer, have longed to own an Epson but been put off by the problems involved? Firstly, it's not easy to connect the two together. Secondly, even when connected, it may be necessary to load driver software or the cartridge slot may be unusable. Finally Commodore-specific characteristics such as graphics and formatting commands will not be available.

Now Micro Control Systems have the solution. Just plug the Comprint circuit board inside the Epson, connect the cable supplied to the Serial I/O port on the Commodore computer and Hey Presto! The Comprint fools the Commodore into thinking it is working with a Commodore printer. All the features are there - total emulation. And it even provides a 2K buffer as well.

What's more all the additional features that have made Epson so successful, such as condensed print and other type styles, are accessible directly by the Commodore computer. For the business user the ability to use 15 inch paper (in the MX/RX/Fx-100 range) and print a £ sign (or other Epson special characters) will prove invaluable.

So go on - spoil yourself. If you are the owner of a Commodore personal computer treat yourself to an Epson - and a Comprint of course!

An Epson in Commodore clothing!

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FOR COMMODORE PC USERS

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COMMODORE 8000, PET USERS

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"Presents excellent value for money... a worthy purchase for any Commodore 64 or VIC 20" - PCN, January 12th, 1985.

"This is one of the most versatile interfaces I have used... a combination that will do almost anything you ask of it" - Commodore User, January 1985.

"Undeniably an interface to look at" - Commodore Computing Int., May 1985



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1.50				1.50				1.50				1.50			
39	58.50		10.80	39	58.50		10.80	39	58.50		10.80	39	58.50		10.80
2.75	5.16		6.61	2.75	5.16		6.61	2.75	5.16		6.61	2.75	5.16		6.61
1.5	3.38			1.5	3.38			1.5	3.38			1.5	3.38		
1.25	3.75		56.08	1.25	3.75		56.08	1.25	3.75		56.08	1.25	3.75		56.08
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14.29			209.97	14.29			209.97	14.29			209.97	14.29			209.97
1- 75.49	2- 62.25	3- 65.97	4- 65.56	1- 75.49	2- 62.25	3- 65.97	4- 65.56	1- 75.49	2- 62.25	3- 65.97	4- 65.56	1- 75.49	2- 62.25	3- 65.97	4- 65.56
5- 59.25	6- 59.25	7- 58.50	8- 58.50	5- 59.25	6- 59.25	7- 58.50	8- 58.50	5- 59.25	6- 59.25	7- 58.50	8- 58.50	5- 59.25	6- 59.25	7- 58.50	8- 58.50
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the small company, and the individual professional and educational buyer will increasingly turn to more cost-efficient PC's. So the IBM PC compatible already commands the major share of the whole market. However, not all PC manufacturers have gone for the IBM 'look alike' strategy. Apple's Lisa and Olivetti's M20 and the TRS 80/16 for example are different enough to need special adaptations to run many software packages. The actual IBM operating system - PC DOS — means that 90% of other PC's, though claiming to be compatible, do need to be adapted to run software expressly designed for IBM. On the other hand, Commodore have gone right down the line and declared that all IBM-designed software that they have tested runs on their PCs, meaning they appear to be truly IBM compatible — an important factor when buying decisions are made.

Some manufacturers like Eagle or Corona who have claimed total compatibility have been stopped by IBM legal proceedings against them. Other's 'improvements' such as main memory expandability to 640 KB and exchangeable 5.25" diskette or 3.5" diskettes as the unique exchangeable medium are entirely incompatible, so much so that many programs simply will not run on PC's which have them.

The growth of better value PC's has meant that IBM's share of its home US market is now running at about 25%. Worldwide it is certainly less than that and in Europe in particular the competition is fierce. IBM lost ground by its 17-month delay between launching the PC in the US and in Europe. Most of IBM's apparent advantages seem useful only to very large corporate users — and even they now believe that reliability and reputation are by no means only available from IBM.

For the fast-growing 'independent professional' market, the leading edge of technological innovation is regarded rightly as something to be avoided. What is needed is a machine that can be trusted; that performs at reasonable speeds; that avoids gimmicks; that has a name and a reputation behind it; that is covered by good back-up services; and, of course, that comes at an affordable cost.

The best advice that anyone can get when considering a PC is to forget about the need to leap up in the air or toddle like a baby with a computer that can answer back or overrun your desk with rodents.

Ignore the gimmicks, simply buy a machine on which you can run the software you need, at a price that fits your bank balance. With Commodore and its PCs entering this market, there is a new contender that merits serious consideration.



"Do what you like but dominate the 2nd generation!"

In January 1975, IBM announced a desktop portable computer — the 5100 — selling for about £5000. It was followed in February 1977 by the 5110 and in 1979 by the 5120 which used diskettes instead of cassettes. All three machines were total market flops.

So, in 1979, IBM set up a special task force — the Entry Systems Design Division — to develop a 16-bit 'personal computer' with the same market appeal as the then dominant professional 8 bit machines — Apple II and the CP/M-80 systems. The Division was entirely separate to, and kept away from, the other IBM divisions.

The PC was given the code number 5150 and the brief was to produce a machine with friendliness to other manufacturers' peripherals, to have a wide choice of applications packages from independent software houses and — revolutionary for IBM — to be sold

through independent distribution channels.

Their instruction was "Do what you like but dominate the 2nd generation as Apple and CP/M 80 has dominated the first."

In August 1981 IBM announced its PC. It had commissioned major software houses to create packages and made sure there was a plethora of add-on peripherals, such as memory cards, already available.

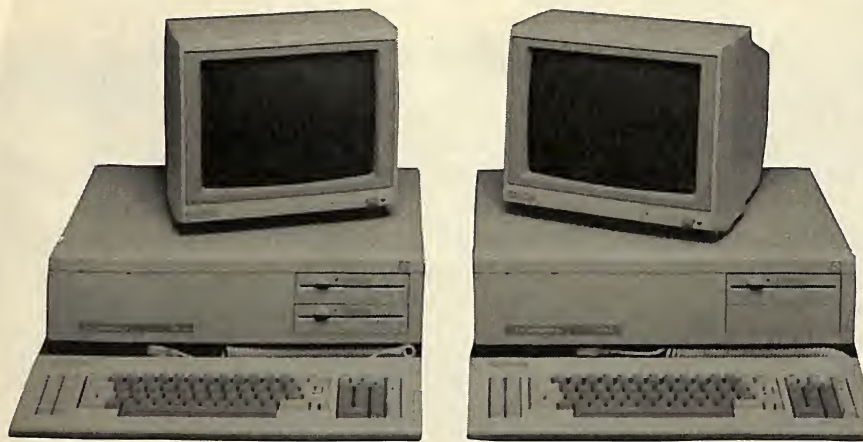
Within a few months, in the US, the IBM PC was selling as fast as it could be manufactured. The promised launch in Europe was delayed and PC's were even bought in the US and smuggled to Europe for companies too impatient to wait.

Other manufacturers seeing the opportunity began to provide machines using MS/DOS — virtually the same standard.

IBM may have had their own interests in mind when they created the PC, but what they achieved was to bring a single standard to a previously chaotic and counterproductive situation. For PC users it was the beginning of revolution.

3 GREAT COMPETITIONS!

Win — a Star Micronics printer . . . a Tandata Modem . . . and a Psion Organiser



Can computers have intelligence? Commodore's PC10 and PC20 pictured here certainly appear to be exchanging knowing glances (or is the pressure of work here at CCI just getting to us?)!

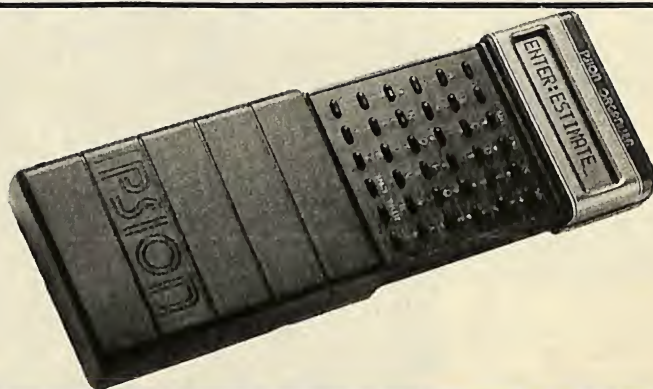
If you would like to communicate with a computer, here's your chance to win a Tandata modem.

All you have to do is answer the following question in not more than 15 words . . . **"What did one PC say to the other PC?!"**

(Send in your reply by 31 July 1985)
Your answer: _____

If you are impressed with the exciting information we've given you about Commodore's PC and are now thinking of rushing out and purchasing one, here's an extra incentive . . .

Send us a photocopy of the warranty card of your new PC (bought before 31 July 1985) and we will enter your name for the draw for the marvellous Psion organiser — a portable extension of your PC — absolutely FREE!



And here's an offer you can't refuse. Send off for a year's subscription of Commodore Computing International before 31 July 1985 and not only will you avoid the queues at your newsagent (or worse still risk missing the best read of the month!), but your name will be entered in a draw for a Star Micronics Printer . . . FREE!

Subscription rates are as follows: UK £15.00, Europe £20.00, and outside Europe £28.50.

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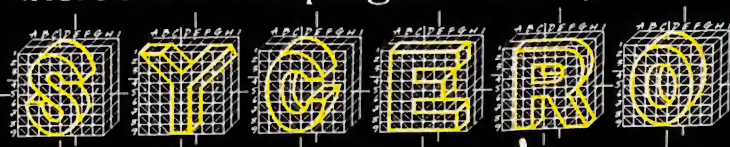
The disk contains one of the most revolutionary programs of the year. Sycero. No matter whether you are a computer novice or a seasoned programming professional, Sycero enables you to build any type of business program.

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And the beauty of Sycero is that it takes no time at all to build a simple program for yourself. When you've built one, expanding it, or building other, more complex programs, is easy.

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The daunting task of choosing a business system becomes far more enjoyable when you consider the new Commodore PC's pedigree:

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Genuinely IBM® PC compatible, so you gain the full benefit of the latest

and best software, and can handle all your business needs including database, spreadsheets and wordprocessing.

Full 12 months Warranty and Commodore's PC Cover Plus to extend it.

The basic specifications include dual 5¼" floppy disk drive, (hard disk version will also be available), 256K RAM, interfaces, a 16 bit processor, and the big 12 inch screen.

The price, considering this kind



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you can welcome like an old friend.

£1,675

of pedigree is quite outstanding: £1,675.

Any of the other major comparable PC's will cost you, at the very least, 10% more.

Finally there's a tailored leasing package and all the top-class training and service backup you'd expect.

You're welcome to come and see a demonstration at your local Commodore dealer. Full details are on PC Hotline telephone: 0536 205252.

For further details send this coupon to the Commodore Information Centre, 1 Hunters Road, Weldon, Corby, Northampton NN17 1QX.

Please send me full details of the new Commodore PC, and the address of my nearest dealer.

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MAINTENANCE COMPANY.**

"We are going to have to sell the PC in a compatible market place where there is good strong competition." — Paul Welch, Commodore's UK manager, sales and marketing, voices the challenge Commodore has set itself with the launch of its IBM compatible PC.

Although competitively priced, Commodore is looking for something more to boost sales of the PC. Welch says: "The product is hardware and software compatible and competitively priced, but we needed more."

"We took a serious glance and said we would put together the best support package on the market place."

This is taking the form of local advertising, dealer incentive schemes, and an extended three year warranty — PC Cover Plus — "A very exciting proposition," says Welch.

Two important elements of Commodore's offered support are financing and leasing.

Commodore now have 50 PC dealers, with more being taken on all the time. The criteria



FINANCING YOUR P.C.

for selection was geographical and quality dealership. "We are working closely with a quality network," says Welch.

"We looked at the three areas that successful dealership could benefit from financial advice," he continues. "All three areas boiled down to cash flow. We have selected professional dealers and they will very soon grow. In growing they will need advice."

One of the biggest problems facing dealers is the problem of having to invest large sums of money in expensive stock. Commodore aims to ease this problem with a selection of tailored financial packages provided by the Bank of Boston.

Boston Financial are a subsidiary of The First National Bank of Boston, one of the 20 largest banks in the USA. They are experienced in financing computer dealerships in the UK.

Boston were chosen by Commodore because "they were the more in tune and interested in a micro division," Welch says: "Boston have a first class record. They are very professional and turned over tremendous figures for the last financial year."

Commodore has also negotiated a leasing deal with United Financial Services, a subsidiary of United Leasing plc. With computer leasing experience dating back to 1971, they are the first leasing company to set up a dedicated microcomputer leasing department.

Of the decision to work with UFS, Welch says: "Again they are a company with a superb reputation in main frames. Leasing allows the lowest cost monthly rentals. We are offering the most competitive rentals."



Paul Welch, new UK Manager for Sales and Marketing.

Paul Welch answers some typical questions asked by prospective Commodore PC buyers.

An extended warranty is offered. Called PC Cover Plus, the warranty offers either one, two or three year on-site maintenance with complete cover on parts and labour. First year cover is offered at five percent of the end user price, the second at 10 percent, and the third at 22 percent.

Q Why not offer an improvement in speed?

A It's all a question of the speed of the chip. Using the 8088 produces higher PC compatibility and the difference in speed is minimal. It will perform at the right price, with the right software and the right support. Increased speed is just marketing hype when you get down to what the user needs and wants.

Q How is the memory board configured, is it full or flexible to accept add-on chips?

A With the Commodore PC you can cheaply upgrade (£310 for 250K expansion, £149 for 128K expansion). The motherboard accepts add-on chips up to 640K.

Q Why are there only five expansion slots?

A The customer really doesn't need more than that number. One can put in more function boards.

Q What about ease of repair or replacement units?

A Under the normal guarantee, the dealership will repair it for up to 12 months. Units under repair would be replaced at the dealer's discretion.

Q Why offer 10 function keys and not 12?

A There are a lot of templates on the market designed around 10 function keypad. The Commodore PC is designed to fit existing software and consumers' needs.

Q Is it really the cheapest PC on the market?

A If you want to buy from a reputable company, you won't get the cheapest but the most price competitive.

Q How flexible will it be in the next three to five years?

A Technology will obviously advance. You can already upgrade to a hard disk system, connect cartridges, minis, mainframes and modems. As it stands, the PC10 is a machine that will not become outdated.

We're not afraid of leasing your PCs.

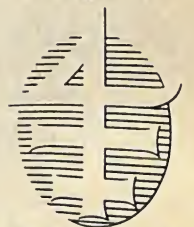
Say 'high technology leasing' to most lessors and they'll run out of the door.

But as United Financial Services is part of the United Leasing Group, we have plenty of experience in this area – and plc backing. We're specialists in the financing of high technology equipment, so we understand the market and your needs.

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FINANCIAL SERVICES PACKAGE

How the service works

1. Factoring

- The distributor or dealer can draw from Boston Financial up to 80% cash immediately against invoices raised. The balance of 20%, less charges, is available when Boston have collected the debt due from the customer.
- Boston operate the sales ledger on your behalf and will provide credit information on your customers and a professional credit collection service on your sales ledger keeping you constantly informed and up to date.
- Boston will statement your customers on your behalf saving you time and expense which can be used to develop your sales.
- Boston have agreed to consider companies for Factoring with turnovers in excess of £500,000 per annum.

2. Confidential Receivables Financing

- The distributor or dealer can draw from Boston Financial up to 75% cash immediately against invoices raised. The balance of 25%, less charges, is available when you have collected the debt due from your customer.

- You continue to operate your sales ledger just as you do now. The Finance available under this scheme is therefore confidential to your customers.
 - Boston Financial have agreed to consider applications from Commodore distributors and dealers for this scheme with annual turnovers in excess of £1.5m.
- #### 3. Stock Financing
- Boston Financial will consider applica-

- tions for stock financing. The funding is available on designated showroom/warehouse Commodore stock. The amount available will therefore differ with each individual application but could be up to 50% of the cost value.
- This arrangement is only for companies applying for the Factoring or Confidential Receivables Financing arrangements.

COMMODORE LEASE PACK

United Financial Services are a predominantly computer leasing company with a strong link with IBM. It was therefore a natural progression to lease other computers such as the PC10.

Managing director, Sam Geneen, explains the Commodore Lease Pack: "What we are offering dealers is tailor made leasing schemes for customers. Commodore discussed it with us and told us the requirements of the user.

We are offering financing for hardware and software over a period of time, therefore spreading the cost and paying on a monthly basis. This is generally over three years, although we would consider up to five years.

There are two options — Lease Hire and Lease Purchase. Lease Purchase is becoming more popular as leasing rates come closer to lease purchase rates.

The advantages of leasing are:

- 1 Spreads costs and repayments over a period of time.
- 2 The customer pays a fixed amount over a period of time.
- 3 Companies may not have the budget to purchase, but they may have a certain amount to spend each month.
- 4 Offers small business users an additional credit line, without affecting bank credit.

We feel that the Commodore PC is going to do well. It's priced correctly and Commodore has a good following."

Expert speaks on PC future

The PC, Commodore's or any other, can rest in the comfortable knowledge of success for some time yet... unless someone comes up with something better for a cheaper price that is.

Such is the basic conclusion of an expert IBM watcher, Fred Lamond, a former market researcher for the Economist Intelligence Unit and independent consultant, author and lecturer in communications and computing. Lamond recently led a series of lectures for a seminar sponsored by the CGS Institute in London.

Despite his forecast that the Intel 8088 chip so integral to PC-DOS will soon be obsolete, Lamond says the future of PC compatibility is secured by several factors, the major being price. "The PC is the cheapest system available with which you can do professional work."

The first affordable machines for professional work were the Apple and Apple II, he says, but IBM's PC locked up the next price category and PC compatibles followed. Two other factors of the PC's success are the ease with which independents can produce cards and the "portable" operating system from Microsoft that

allows fairly easy access for writing applications programs for the system.

For compatibles in particular, a bit of originality could be the clincher. In the US, for example, Compaq is in the number two spot with its transportable PC, the first portable PC to be released and a good bet for securing Compaq's future at least for a while.

The 640K limit of PC-DOS may be a problem and that is where the new chip, the 80286 may prove superior with pipelining, memory mapping and a general advantage in speed.

"You are at the start of a change of chip generation," Lamond says. "Obviously there are going to be new hardware generations."

Nevertheless advancements do not necessarily mean major discontinuities.

One example is the new machine rumoured to be emerging from the IBM chambers later this year. Chances are it will be compatible with existing PCs, perhaps more so than the PC-AT which varies in its bus system but still accepts most PC software.

"One expects a new PC from IBM

sometime this year but the new one will be compatible with the existing," Lamond says. "IBM will continue to set new standards and the compatibles will follow."

"They (PC's) will continue to be the preferred systems and perhaps Commodore has got a chance to get a fair slice of the PC market."

A particular advantage is the price, with Commodore floppy disk version, the PC 10, selling for £1,675 compared to the cheapest compatible, the Ferranti.

So with several — 13 to be precise — companies vying for slices of the PC market, the future probably will bring a filtering out of some of them with the smaller birds more susceptible to age and wear.

"Wherever you have a few companies producing a product that is basically the same with only a few differences, the ones that will survive will be the ones who can offer a wide support network and keep themselves in the public eye. Those will likely be Phillips, Olivetti and, if it manages to acquire a big user base, Commodore."

Elephant comes clean

Advertisement Feature

The PC revolution took computers out of the rarified atmosphere of the data processing environment, straight into the office and into the home — into the real world of smoke, smudgy fingers and dust. DP managers the world over relinquished the responsibility for safeguarding data and passed it over to non-specialists — office managers, their assistants, their wives and their children — for general business and domestic use.

Data protection procedures practiced in DP installations had to be scaled down to the low tech office and home environment. Magnetic tape, has characteristics similar to floppy disks; and the problem of contamination of either media leads to the same dire consequences — loss of data. European standards published by the European Computer Manufacturers Association recommended cleaning magnetic tapes periodically. The same applies to floppy disks. So why this need for cleanliness? All magnetic media eventually sheds oxide, some more than others, and to achieve maximum efficiency it is necessary to clean not only the magnetic material but the head and other parts of the

computer regularly to prevent recontamination.

Unlike audio and video tape which record analogue information, computer media records only digital data.



Any missing one or zero changes the information. Historically, as the packing densities on media increased, so the problems caused by contamination intensified. A new magnetic maintenance industry, pioneered by Dennison, emerged and its technology and equipment has been accepted throughout the world.

Floppy disks rotate at 300 revolutions per minute. A small particle of dust can wipe out a 20-page report or a treasured program — and you cannot

even see it with the naked eye. Preventative maintenance can remove contamination before the damage is done and this is where Dennison come in. In addition to their high quality floppy disks, marketed under the brand name, Elephant, they now offer a range of cleaning products. There is a disk drive head cleaner — a non-abrasive, lint-free, non-woven cleaning disk which has the same torque value and anti-static properties as a floppy disk. The cleaning disk is inserted daily in the drive and virtually all contamination is automatically driven out in seconds. There is also a range of chemical cleaners for the screen, the computer components and a special anti-static fluid to protect the installation against static shocks. Regular use with these products will overcome four basic computer problems — dirty heads, smudgy screens, the static problem and general dirt in the computer room. It pays to come clean.

A range of Elephant cleaning products available from the Dennison Manufacturing Company Ltd.

Further information from:— John Wise (Tel: 0923 923321)

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Enter the Commodore PC10 — Commodore's IBM PC Compatible Personal Computer. It takes its place with the already well populated jungle of IBM clones which is rather a shame as Commodore were the first into the now large PC marketplace with their Pet. Times have changed, IBM have set the standard — the rest must follow.

So what are our impressions of the PC10?

It is the traditional 3 box PC configuration comprising a systems unit with its 256KB RAM, two 360 KB 5.25-inch drives a 12-inch non-glare, green phosphor monitor and, of course, a keyboard. Documentation includes a user manual, MS-DOS manual, GW Basic manual, PC 10 System disk, describe disk and reference card. This little lot costs £1,675.

We had no difficulty in fitting the three elements together following the ever quick instructions. It would be useful to have a carrying handle on the monitor as we nearly had a nasty accident with it taking it out of the box.

Once set up the PC10 looks an attractive unit with its cream and grey colour scheme — it gives the impression of being well designed, well engineered and built to last.

To get the system to do anything it must be "booted up". How to actually do this is explained in the user guide. However we do wonder why it is buried so far in after such 'valuable' information as keyboard notes, which of course have no meaning until you actually get the beast up and running. One other criticism — the actual bootup procedure should be more clearly set out in note form rather than in one continuous sentence.

Securing the system disk in Drive A is accomplished by pushing the disk home and depressing a spring-controlled button — the first time requires a two handed operation but thereafter it can be accomplished in one thumb movement.

The monster springs into life with a series of Dalek noises just to wake you up. This tells you are using an evaluation copy of MICROSOFT CORP MS DOS 2.11 with compatibility (with IBM) by PHOENIX Software Accounts Ltd. Stepping through the prompts for date and time is quick and now you are ready to do something with the system — but what?

As a truly compatible IBM clone, any of the IBM PC software should run on it. We used evaluation copies of PSION's X-Change, Spotlight by Software Arts. Intended for the IBM PC both worked properly.

Over 1000 packages

All the well known packages such as LOTUS 1-2-3, Word Star, D Base II & III run well on it. Currently IBM has a catalogue of over 1000 packages which run on the IBM PC and which should run on the PC-10. Commodore have evaluated

ON TEST...



STOP PRESS

Moments before going to press we managed to get our hands on the upmarket PC20 — Commodore's answer to the IBM XT. The very first one Commodore have allowed into the clutches of the press. Another CCI scoop!

Like its younger brother the PC10, it is fully compatible with the respective IBM machines. It has one 360KB floppy drive and a 10MB Winchester disk. Outwardly the only difference between the PC 20 and 10 is the former's blanking panel where the lower drive aperture is located on the PC10.

Under the chassis it has 256KB (as PC10) of RAM, all other specifications being the same, the MS-DOS 2.11 monitor (green on black), etc. But it has only 3 expansion slots as compared with the PC10's four, one already being taken up for the controller. (This points up a somewhat misleading statement by Commodore that the PC10 has five expansion slots and the PC20 four. True but in each case, one is already occupied).



Obviously, this XT clone is aimed at a similar marketplace — the serious business user with a fair amount of data to control. The high storage capacity of the hard disk format makes that even more relevant. It would therefore have been friendlier if one was not forced to boot off the floppy but had the option to boot directly off the Winchester. Commodore tell us that is not possible — what a shame!

However, at £2,795 (before discounts) it is 'aggressively' priced and is definitely worth a long, hard look.

CCI intends to get one for subscriptions, administration, accounting and databasing. We'll keep you posted on how we get on as well as giving you some more indepth review info in our next issue.

hundreds of IBM PC packages and haven't found one that won't run on the PC-10.

In operation one cannot help being impressed by the 12-inch monitor, even

allowing for having no choice — it is green on black (no colour, amber/brown, etc) and implements an 80 column format. The characters are very well defined, the anti-glare does what it says, and all the controls, i.e. on/off, contrast and brightness are easily located. In addition, it has 3 TV-type control knobs at the back which adjust for frame, height, width and vertical hold. Even the clearing of the screen is done without any tracing phosphorus. All in all a superb monitor — the finest one we have come across — which should endear itself to the serious user needing to spend time in front of a screen.

Commodore is planning a 14-inch medium resolution RGB colour monitor to be available soon along with CBM's own colour card. Meanwhile, CCI used an IBM PC and PC look-alike compatible colour monitor from Microvitec. It's the CUB 653, a 14-inch RGB with a bandwidth of 18MHz. The cabinet is an attractive swivel model with a grey colour to match the IBM. Despite Commodore's leaning toward a beige tone, the two are still complementary and the price of the monitor is a nominal £455 incl VAT.

The PC10 user manual indicates nothing about how to use/attach a colour monitor or the required colour card, an indication that Commodore is hoping consumers will wait until its own versions are available. Meanwhile, we would recommend you not try the same thing unless you really know what you are doing. Otherwise, you could jeopardise your warranty. When in doubt check with Commodore or your dealer.

The keyboard is well laid out with some nice features like illuminated caps lock and num lock keys. The latter allows full use of the numeric keypad — ideal for the business user whose bulk input is going to be numeric data, i.e. account numbers, invoice numbers, amounts, order numbers, etc. There are 10 function keys which are used under Program control. The keys are sculptured and with a positive feel to them — we liked using it.

The drives whirl away quietly telling you the disks are being accessed, confirmation given by the small red light — very reassuring. They take double sided, double density 5.25 inch diskettes and format in 40 tracks of nine sectors each, once again IBM compatible.

Very impressed

Overall we are very impressed with the PC10 and at £1675 (before discounts), it provides good value. The fact that a standard IBM-compatible monitor and colour card work with it gives additional reassurance that the machine is compatible on the hardware level as well as the software level — a key to the claims of "true" compatibility.

Obviously the PC10 is no technological innovation, thus it is the support and CBM's ability to sell en masse to corporate users that will decide the ultimate success or failure of this clone in a very competitive but growing market.

...THE COMMODORE PC...

VIZAWRITE PC WORD PROCESSING

VIZAWRITE is probably the easiest business program that you will ever use!!

Right from the start, just type onto the screen and your words are instantly laid out on the page.

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VIZAWRITE can also proof-read your work, excellent at picking out those 'juggled' words that get typed when the phone rings.

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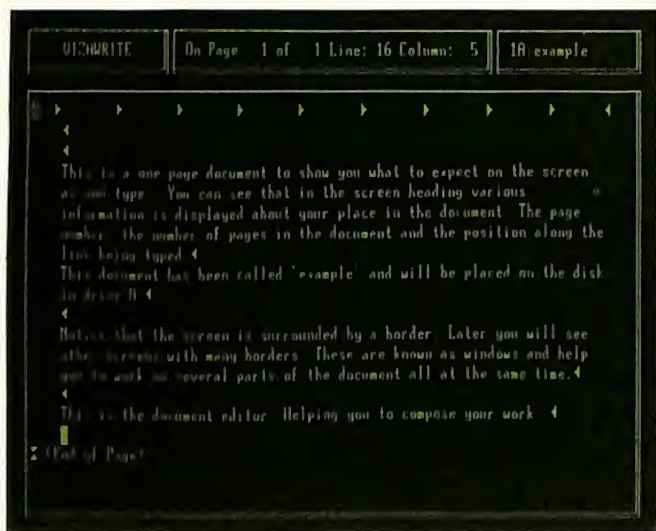
VIZAWRITE is so easy to use, THE TIMES featured it again and again in no less than three separate articles on word processing for newcomers.

We've even included some of the latest software 'fashions', such as WINDOWS to view several documents at once, such as PULL DOWN MENUS that assist command selection, such as on-screen HELP if you can't find the manual!... and much more.

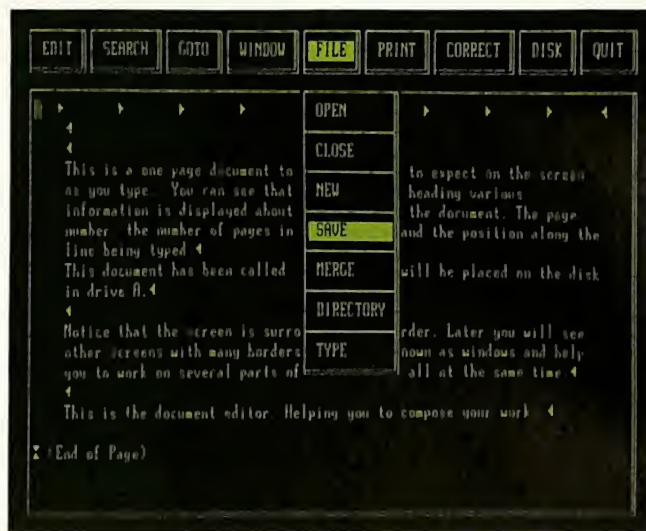
VIZAWRITE is an extremely advanced word processing package with powerful layout and filing commands, fully integrated spelling checker and easy to use mail shot system.

Remember that VIZAWRITE has achieved an ease of use that you won't find in any specification.

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The Document Editor Screen



The Command Menu

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CCI

The PCIO - the Specification

SPECIFICATION

CPU

8088 Processor
8087 Co-processor (optional)
4.77 MHz clock rate

Memory

Main RAM size
256K RAM Standard
Internally expandable to 512K
Externally expandable using full length expansion boards to 640K.

ROM size

Standard 8KB

Display

12" CRT (non glare phosphor green)
14" medium resolution RGBI colour monitor (available shortly after launch)

Alphanumeric B/W char resolution 9 x 14
80 x 25 character display
Colour and Hi-Res graphics are not in the standard configuration at launch.

Storage

Dual 360K/byte, 5 1/4" double density, double sided disk drives (PC-10)
Format: (IBM® compatible): 40 tracks, 9 sectors/track.
or
Single 360K/byte, 5 1/4" disk drive plus 10M/byte hard disk.

External Storage

The internal floppy disk controller is able to handle up to 4 drives.
Controller is capable of supporting two Winchester drives with a capacity of up to 70M/bytes per drive.

Expansion

5 full sized PC compatible expansion slots

Keyboard

Detachable keyboard
85 keys including 10 function keys and numeric keypad.
Meets European DIN requirements.

Interface

Parallel Printer port (Centronics)

RS232C port

Monochrome video output
Composite B/W video output (not in the standard configuration at launch)

Operating System

MS-DOS

Language

GW Basic

Optional programming languages: Cobol, Fortran, Pascal, Macro Assembler etc.

Physical Specifications

Base Unit (CPU)	Ht 14.5cm
width 49cm	depth 39cm
Monitor	Ht 27.7cm
width 30.3cm	depth 29.3cm
Keyboard	Ht 4.0cm
width 49cm	depth 17cm

Power Supply

CPU 240 VAC 170 watts, 50Hz
Monitor 240 VAC 30 watts, 50Hz

IBM® is a registered trade mark of
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SOFTWARE PACKAGES

PC software tried and tested by CBM

With more than a thousand IBM PC compatible software packages on the market, choosing one could be frustrating.

So could listing them. On the other hand, you can't ignore software either since it is even more the key to your computerised success than the computer itself. The best dealers advise you to choose your software first and then find the computer that goes with it.

CCI has compiled the following list to give you a sampling of the world now open to those new to PCs. All of the packages have been tested and are truly compatible with the new Commodore PC, including the traditional toughy, Microsoft's Flight Simulator!

Most of the software is available from the two software distributors selected by Commodore, Software Limited and Pete & Pam Micro Distributors Ltd. Their addresses appear at the end of the list in case you want further information or the name of a dealer near you. We've also included the addresses of the software originator when the company has a UK base (many are American). Finally, most PC dealers are familiar with these packages.

Prices quoted are recommended retail and do not include VAT.

Software Limited, No. 2 Alice Owen, Technology Centre, 251 Goswell Road, London EC1N 9JQ. Tel: 01-278 2377.

Pete & Pam Micro Distributors Ltd, 1 Gleneagle Road, Streatham, London SW16 6AY. Tel: 01-677 7631.

Wordprocessors and Wordprocessing aids

WORD

A wordprocessor, available with or without Microsoft's Mouse. Commands are in plain English and the program is easily understandable. The screen can be divided into as many as eight 'windows' and each window can contain a separate document. Price: £400.

Contact: Microsoft Ltd., Piper House, Hatch Lane, Windsor, Berks. SL4 3QJ.

MOUSE

A hand held pointing device that controls the motion of the cursor on the screen. The user is freed from having to use the keyboard to move the cursor and can concentrate on making command selection. Price: £190.

Contact: Microsoft Ltd., Piper House, Hatch Lane, Windsor, Berks. SL4 3QJ.

Continued on next page

MULTIMATE

A wordprocessing system with many of the features of dedicated word processors. Although Multimate has menus, almost every command is available at any time from a combination of Alt, Ctrl, Shift, Function, and alpha-numeric keys. Price: £455.

Contact: Multimate Int'l., USA.

WORDSTAR

A wordprocessing system designed for non-technical personnel. The principal features are: cursor-tracked screen display, automatic disk buffering, on-screen text formatting, status line, powerful editing commands, dynamic page break display, split screen help menus. Price: £295.

Contact: Micropro Intl., Haygarth House, 28-31 High Street, Wimbledon Village, London SW19 5BY.

MAIL MERGE

An enhanced printing facility that allows a Wordstar user to produce form letters, insert variable text into the document during printing, insert named files in the printout and print multiple duplicate copies of a document. Price: £145.

Contact: Micropro Intl., Haygarth House, 28-31 High Street, Wimbledon Village, London SW19 5BY.

SPELLSTAR

Allows you to check a text file for spelling and typographical errors. It compares the entries against a dictionary of some 20,000 English words. Useful for use with word processors that do not feature spelling checkers or to enhance those which do. Price: £145.

Contact: Micropro Intl., Haygarth House, 28-31 High Street, Wimbledon Village, London SW19 5BY.

STARINDEX

Can be used to create reference aids to help locate information in a report, contract, manual, brief, or any other document. It provides four reference aids: index of topics, table

of contents, list of figures, list of tables. Price: £116.

Contact: Micropro Intl., Haygarth House, 28-31 High Street, Wimbledon Village, London SW19 5BY.

CORRECTSTAR

A phonetically designed spelling checker. When it comes to a word not known to the 65,000-word dictionary it will offer alternatives. The user can switch between spell checker and edit mode with a single key stroke. Price: £160.

Contact: Micropro Intl., Haygarth House, 28-31 High Street, Wimbledon Village, London SW19 5BY.

WORDSTAR PROFESSIONAL

A combination of Wordstar, Spellstar and StarIndex at a relatively lower price. Features of components are as described above. Price: £399.

Contact: Micropro Intl., Haygarth House, 28-31 High Street, Wimbledon Village, London SW19 5BY.

ADDRESSBOOK

A program used to store names, addresses, telephone numbers and related information. Entry, retrieval and updating available as well as a comprehensive search feature. One file can hold 10,000 addresses. Price: £90.

Contact: Decision Technology, 7 St. John's Road, East Molesley, Surrey KT8 9JH.

QUILL

A wordprocessor which is straightforward to operate. Uniquely, the screen always shows you the document in the same form in which it will appear when printed. For example, if you alter the width of a margin, the entire document is reformatted instantly and automatically. Price: £175.

Contact: Psion Systems Ltd., 22 Dorset Square, London NW1 6QG.



Financial Modellers and Spreadsheets

ABACUS

The first 'intelligent' spreadsheet that automatically recognises text, which can then be used directly in formulae. Budgets and forecasts can be generated in minutes, making it practical to answer important 'what if' questions on-the-spot and to evaluate alternative courses of action. Price: £175. Contact: Psion Systems Ltd., 22 Dorset Square, London NW1 6QG.

SUPERCALC 3 Release 2

A new spreadsheet accounts package. Using one disk, it is simple to use and very fast. It combines a large spreadsheet, superior graphics, single keystroke data plotting and instant circular calculation capability. Price: £295. Contact: Sorcim/IUS, St. Mary's Rise, 16-20 High Street, Maidenhead.

Database Management Systems

DATAMASTER

A relational database manager using a specially developed language that makes file handling and data manipulation easy even for users without programming experience. Principal features include: true relational database structure, datamaster query language, customized reports, password/data security facilities. Price: £495. Contact: Sapphire Systems, 1-3 Park Avenue, Ilford, Essex.

D.M.S.

A powerful storage and retrieval program. Once again no programming skills are required. Its features include: selecting and sorting, changing existing files, calculations in DMS, screen display, report generator, word processing. Price: £495. Contact: Compsoft Ltd., Hallams Court, Shamley Green, Nr. Guildford, Surrey GU4 8QZ.

CARDBOX

A fast, easy to use electronic card index system. The 'card' records can be designed and altered at a later date. It has sophisticated retrieval facilities, and data is resident in memory for speed. Price: £195. Contact: Caxton Software, 10-14 Bedford Street, Covent Garden, London WC2E 9HE.

CARDBOX PLUS

Contains all the features of Cardbox, but with useful added features which make it a much more powerful tool for business. Some of the extra features are:— numeric recognition and selection, an autosave feature and more sophisticated data retrieval. Price: £300. Contact: Business Simulations Ltd., Scriventon House, Speldhurst, Tunbridge Wells, Kent TN3 0UU.

KNOWLEDGEMAN

A comprehensive and integrated system for handling information. It comprises: data management, ad hoc enquiries, spreadsheet analysis, screen management, statistical analysis, printed form management. Price: £ Contact: MDBS, Incl., USA.

DBASE II

A relational database management system. Using simple,

Continued on next page

FALSE ECONOMY BLEAKER MOMENTS

It can come as a rude awakening to a serious personal computer user that the printer he thought was such a bargain couldn't even handle his day-to-day correspondence.

Especially when £259 could have bought him Star's new SG-10.

A dot matrix printer that not only sets new standards in value and reliability, it offers outstanding print quality.

Compare the features for yourself:

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- ☐ Easy interfacing with virtually all popular computers, including IBM PC's.
- ☐ Prints on single sheets and fan-folded paper.
- ☐ Printer memory of 2KB that can be expanded to 10KB with optional buffer board.
- ☐ Wide range of character sets and fonts. International characters, italics and proportional spacing can be selected on all modes.

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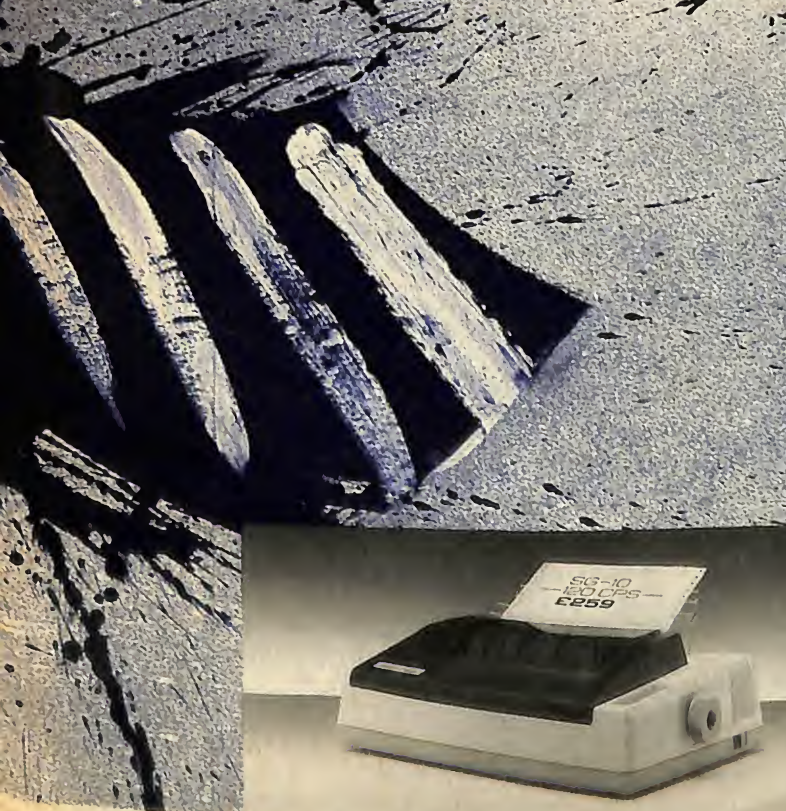
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Address _____

— CCI —

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WHEN WILL YOU BECOME A STAR WITH ONE OF OUR PRINTERS?

Commodore Computing July 1985 23



English-like commands you can create your database, then enter, add, delete, edit, display, print and manipulate your data. It is an information handler, rather than a file handler and no knowledge of programming is required. Price: £395.
Contact: Ashton-Tate, Oaklands, 1 Bath Road, Maidenhead, Berks.

DBASE III

Has been expanded for 16 bit computers. Interactive User Features:—command assistant, enhanced report capability and mailing label generator, on line help system, enhanced full screen operation. Price: £550.

Contact: Ashton-Tate, Oaklands, 1 Bath Road, Maidenhead, Berks.

FRIDAY

An easy to use, menu driven, database manager designed for the novice. It will find any field information in seconds and sort files on up to five fields at a time. The file structure also can be changed easily. Price: £195.

Contact: Ashton-Tate, Oaklands, 1 Bath Road, Maidenhead, Berks.

DATASTAR

A powerful, comprehensive data entry, retrieval and updating system. The package consists of two parts: 1) allows the user to define forms for entering data; and 2) allows files to be updated using these form definitions. Price: £175.

Contact: Micropro Intl., Haygarth House, 28-31 High Street, Wimbledon Village, London SW19 5BY.

INFOSTAR

Consists of Datastar 1.4 and Reportstar 1.0. It provides the user with a database system that is powerful and easy to use. It can be used for personnel records, data records, stock recording and control, time recording and invoicing. Price: £295.

Contact: Micropro Intl., Haygarth House, 28-31 High Street, Wimbledon Village, London SW19 5BY.

REPORTSTAR

Provides an efficient way to access and use the information stored under Datastar. It consists of seven main divisions: quick report, report format editing, print enhancement, field totalling, processing transactions, form sorting, writing reports to disk. Price: £210.

Contact: Micropro Intl., Haygarth House, 28-31 High Street, Wimbledon Village, London SW19 5BY.

ARCHIVE

A powerful, flexible, simple to operate database program. It can use any number of files at one time and the indexing and searching facilities make it easy to query the database to extract information. Price: £250.

Contact: Psion Systems Ltd., 22 Dorset Square, London NW1 6QG.

Personal Productivity Aids and Management Tools

DATEBOOK

An electronic diary that searches for appointments entered and reduces the frustration of finding open slots when more than one user is involved. It will maintain the appointments of up to twenty seven people in nine groups of three. Price: £220.

Contact: Organic Software, USA.

MILESTONE

Planning a project is a complex task involving questions of time, money and inevitable delays. Milestone answers these questions quickly and easily and expand the application of Critical Path Analysis. Price: £245.

Contact: Organic Software, USA.

LOTUS 1-2-3

The first product to combine spreadsheet, graphics and information management into one integrated package. The

facilities available include: global settings, variable, column widths, recalculation, cell protection, insert and delete columns and rows, title freezing, split windows, justifying, copying, moving. Price: £430.

Contact: Lotus Development (UK), Consort House, Victoria Street, Windsor, Berks. SL4 1EX.

SYMPHONY

An integrated package comprising spreadsheet, database, word processor, graphics and screen handling commands. The main feature of this program is 'windows' allowing the user to view several different portions of a spreadsheet at a time. It also includes communications software. Price: £595.

Contact: Lotus Development (UK), Consort House, Victoria Street, Windsor, Berks. SL4 1EX.

FRAMEWORK

A fully integrated electronic desk top package incorporating word processing, outlining, database, spreadsheet, graphics, DOS access and programming. Frames are self-contained, inter-related displays that can be nested, re-sized and relocated anywhere on the screen. Price: £550.

Contact: Ashton-Tate, Oaklands, 1 Bath Road, Maidenhead, Berks.

OPEN ACCESS

A relational data base system. By entering data via one OPEN ACCESS module the user can update other modules with that information with a single keystroke. It comprises data management, spreadsheet, 3D graphics, diary, word processing and telecommunications. Price: £450.

Contact: Software Products Int'l, 13 Horseshoe Park, Pangbourne, Berks.

CODE GENERATORS, CODING UTILITIES AND MENU SYSTEMS

EXPRESSBASE II

Designed for dBase II programmers wanting to cut down the time needed to develop programs and produce screens and reports. It can be used with a word processor, giving the user with a form of shorthand for programming. Price: £125.

Contact: Salamanca Software, 64 More Close, St. Paul's Court, London W14 9BN.

STARBURST

A system that helps integrate standard software products using a menu structure. Basically acts as an interface between the operating system and application products so that the user doesn't have to use more technical operating system commands. Price: £125.

Contact: Micropro Intl., Haygarth House, 28-31 High Street, Wimbledon Village, London SW19 5BY.

ACCOUNTING SOFTWARE

NOMINAL LEDGER

Provides for the maintenance of a general ledger through trial balance to profit and loss and balance sheet reports. Full password entry control maintains the security of the ledger. Price: Around £350.

Contact: Pegasus Software Ltd., 35-41 Montagu Street, Kettering, Northamptonshire NN16 8XG.

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... unlike a standard hard disk subsystem, then, the BORSU 10+ drives are virtually indestructible. Visitors to the BORSU stand at a recent trade show were amazed to see disk cartridges hurled to the floor and the drive itself thumped, bumped and even turned upside-down *during a read write operation!* In terms of the maintenance of data integrity these acts of apparent vandalism went totally unnoticed by disks and drives alike.

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With storage density of 24,000 bits per inch the BORSU 10+ drives need a fairly extensive error correction scheme, and the designers have responded to this need – with a vengeance. Although each of the 306 tracks actually contain 70 sectors, only 64 are released to the user. Of the remaining 6 sectors one provides a 4096 bit parity check for the rest of the track. The other five sectors act as substitutes should any of the regular sectors become unusable.

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If your thinking on mass storage systems is in a rut, prepare to change your views. Traditionally, you buy a hard disk system with 5, 10, 20 megabytes of storage, as the case may be, and what you see is what you get. Now BORSU have changed all that.

Buy a BORSU 10+ dual disk subsystem and you start at 20 megabytes (10 Mb per drive). For just

£75, however, an extra removable cartridge will add a further 10 Mb capacity, ad infinitum.

The Disk that Cleans Itself

The revolutionary BORSU 10+ 'flying disk' drive has overcome one of the biggest threats to the safe storage of computer data – the stray speck of dirt.

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In the BORSU 10+ system a major feature is

the constant airflow between the disk and a rigid metal plate below it. This constant draught, flung out from the region of the drive shaft, actually cleanses the entire work area with every revolution, a sort of vacuum cleaner in reverse. And this isn't just a clever idea – it works!

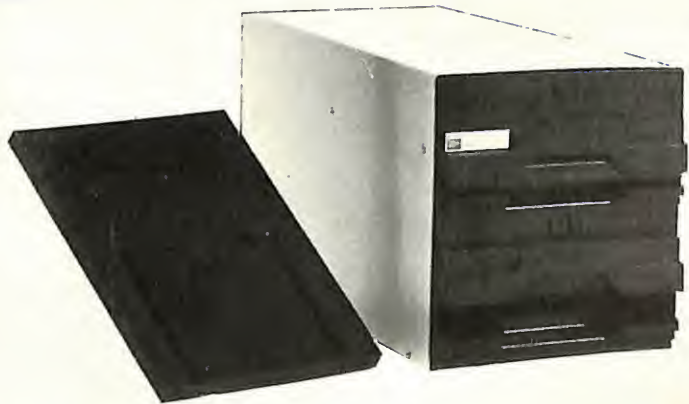
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Whilst several companies are putting their trust in high-speed, multi-band tapes as the best back-up to a hard disk BORSU knows different.

After several years of exhaustive R&D the new BORSU 10+ drives look set to knock both tapes, and possibly even hard disks, clear out of the ring. After all, what's the point of tying yourself to single hard disk units when you can get the same kind of storage density (10 megabytes per drive), faster operations (under 5 seconds spin-up time, 35 msec access time), and all the disk space you could *ever* need on easily exchangeable cartridges – with none of the limitations of a tape?

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Maintains records of all purchases, details of suppliers and provides facilities for the processing and analysing transactions. It offers automatic payment routine with suggested payments list as well as facilities for automatic cheque writing. Price: £350. Contact: Pegasus Software Ltd., 35-41 Montagu St., Kettering, Northamptonshire NN16 8XG.

SALES LEDGER

Maintains records of all sales, details of customers and provides facilities for processing and analysing transactions. It also produces debt collection letters. Price: Around £350. Contact: Pegasus Software Ltd., 35-41 Montagu St., Kettering, Northamptonshire NN16 8XG.

STOCK CONTROL

Provides precise control of all information relating to stock levels, values and outstanding orders. A free format purchase order can be produced and receipts can be posted against orders raised. Price: Around £350. Contact: Pegasus Software Ltd., 35-41 Montagu St., Kettering, Northamptonshire NN16 8XG.

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A risk analysis program designed to answer hypotheticals arising from an accounts model and cashflow forecast. Graphical and numerical displays show the chances of achieving varying degrees of success and failure, profit and loss. Better for smaller businesses not wanting to spend hundreds. Price: £145. Contact: Sagesoft Ltd., NEL House, Regent Centre, Newcastle-upon-Tyne NE3 3DS.

INTEGRATED ACCOUNTS

Three versions available ranging from a very basic to a fully integrated sales, purchase and nominal ledger with multi-location, multi-price stock control, sales order processing, purchase order processing and the ability to factor accounts. Price: From £1124 to £1799. Contact: Anagram Systems, 60A Queen Street, Horsham, West Sussex RH13 5AD.

STOCK MASTER

Fully integrated stock control package with sales and purchase order processing, allowing production of invoices, credit notes etc. Also available with additional bill of materials processing. Price: From £674 to £1011. Contact: Anagram Systems, 60A Queen Street, Horsham, West Sussex RH13 5AD.

COMMUNICATIONS

BSTAM

A telecommunications facility for transmitting and receiving CP/M files over telephone lines. The built-in features include error checking, group file transmission and reception. £165. Contact: Byron Software, USA.

MOVE IT

A micro to micro communications system. Files can be transferred regardless of the particular hardware environment used. File transfer is accomplished in 'packets' and includes message numbers, data count and 16 bit check summing. This ensures low error rates and file integrity. Price £130. Contact: Woolf Software Systems, Inc, USA.

CROSSTALK

Opens lines of communication with virtually any other computer system and performs a variety of functions that can save you time and money. It has the largest and widest user base of any commercial CP/M data communications software package. Price: £195. Contact: Micro Stuf, USA.

CHIT-CHAT

A versatile data communications program for the user on a budget designed to enable incompatible machines to

communicate with each other either by modem or by cable. This allows either manual or automatic transfer of single or multi-files between two machines anywhere in the world. Price: £130.

Contact: Sagesoft Ltd., NEL House, Regent Centre, Newcastle-upon-Tyne NE3 3DS.

PROGRAMMING LANGUAGES

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Basic-80 meets the requirements for the ANSI subset standard for BASIC. It has advanced handling and structured programming features. Some of the features are: four variable types, error trapping routines, direct access to I/O ports, extensive program editing facilities. Price £340. Contact: Microsoft Ltd., Piper House, Hatch Lane, Windsor, Berks. SL4 3QJ.

CBASIC-86

Supports all the features of CBASIC which is designed for the development of financial and business applications. It is well suited to the needs of business data processing. Price: £170. Contact: Digital Research (UK) Ltd., Oxford House, Oxford Street, Newbury, Berks. RG13 1JB.

CBASIC COMPILER

It offers all the features of CBASIC plus the speed and versatility of a compiler. Other enhancements include support of 32K strings, external multiple line functions, run-time error trapping and extended file handling capabilities. Price: £425. Contact: Digital Research (UK) Ltd., Oxford House, Oxford Street, Newbury, Berks. RG13 1JB.

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DR C is a full function implementation of the standard C programming language. It includes six executable components: C Compiler, reverse pre-processor, linkage editor, library utility, relocatable assembler, assembly language cross reference utility. Price: £295. Contact: Digital Research (UK) Ltd., Oxford House, Oxford Street, Newbury, Berks. RG13 1JB.

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A powerful and flexible means of presenting any form of data. It lets you choose from up to 45 different chart and graph formats and also lets you design your own. Chart is specially designed to work directly with Multiplan a grid-format electronic worksheet from Microsoft. Price: £245. Contact: Microsoft Ltd., Piper House, Hatch Lane, Windsor, Berks. SL4 3QJ.

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A unique interactive graphics package which can display high resolution representations. Each aspect of a graph can be designed in detail to produce a professional-standard graph. Price: £175. Contact: Psion Systems Ltd., 22 Dorset Square, London NW1 6QG.

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The BP 5420I combines most of the features of the BP 5420 printer with all IBM characters, symbols and graphics as standard. The BP 5200I operates at 206 cps (draft) and 103 cps (NLQ) and represents one of the best value printers of its kind on the market.

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Profitable Computing

The object of this article by Alfred Rose is twofold, it takes the reader step by step through the stages of constructing a spreadsheet for investments. It is also a review of using "CALC RESULT Advanced" for this purpose.

Profitable investment results from good timing based on accurate update information. The spreadsheet described in detail in this article provides at a glance the information required.

Though I have used a CBM64 and "CALC RESULT ADVANCED", the details given will apply to most computers used with a spreadsheet. With early versions of spreadsheets such as "VISICALC", it was not possible to compile a sheet with tax calculations. This was because they would not handle formula with the terms "IF THEN ELSE, GREATER THAN and LESS THAN".

After working on other spreadsheets, I found using "CALC RESULT ADVANCED" like changing from a standard popular car to a Rolls-Royce.

When you first use CALC RESULT it is important to spend a few hours getting to know the program and setting up your master disk. Once the object of the "User Register" is grasped, the user begins to appreciate why you have to work through the routine of making a master disk to suit

your own particular requirements. The original master disk contains HELP sheets in eight languages and a choice of eleven different printers. To save space and to speed up operation, on the work disk you only include the language and printer that you require. An excellent manual guides the user step by step through the initial stages.

As opposed to CALC RESULT's one page, CALC RESULT ADVANCED can use up to 32 pages (worksheets), each page divided into rows and columns. The intersections between the rows and columns create thousands of cells. In every one of these cells you can enter a number, words or formula.

Because of the amount of work to be covered, only a brief outline of how the program handles the data will be given and the other functions will be introduced as we construct the investment spreadsheet.

Data Handling

CALC RESULT stores data in three places.

(1) In RAM, the CBM's internal memory, which can store two (two thousand cells) at a time.

(2) In the work area, located on the program disk, which acts as a temporary storage area and extra memory to the RAM. When the internal memory is full, certain pages are moved to the work area. This ingenious arrangement not only extends the computer's ability to handle large spreadsheets but allows you to quit an incompleted sheet, without losing the data.

(3) Completed work is saved on a data disk.

Full use is made of the CBM64 function keys and a very neat plastic template is provided to label these keys. To use the CALC RESULT commands, press function key F7.

The Investment Sheet

Having worked through the Tutorial lessons in the manual you are ready to form your investment sheet. Page 1 (see example) is designed to keep a record of shares

PAGE 1								
DATE	MAR2ND85	F/T	ALL SHARE	\$EXCH.RATE	H59	PROF	MAR85	H35
DOW	1299.36	975.00	605.82	1.08				

SHARE	NUMBER	UNIT COST	T/COST	UNIT VAL.	TOTAL VAL	PROFIT	PROFIT%	
EMF(CRES)	1700.00	0.63	1077.84	181.50	3085.50	2007.66	186.27	
MG JAP S/C	3030.00	0.50	1500.00	65.80	1993.74	493.74	32.92	
GEC	1000.00	1.99	1994.07	198.00	1980.00	-14.07	-.07	
MARSHALL	2000.00	0.38	757.89	38.00	760.00	2.11	.28	
JARDINE(ER	2023.00	0.94	1894.51	121.00	2447.83	553.32	29.21	
UNISON TEC	2500.00	0.11	268.08	40.00	1000.00	731.92	273.02	
BRIT OIL	500.00	1.83	915.00	205.00	1025.00	110.00	12.02	
H&S BANK	2500.00	0.65	1622.20	104.00	2600.00	977.80	60.28	
SONY	330.00	7.86	2594.47	18.75	5742.46	3147.99	121.33	
STD OIL	75.00	21.24	1592.77	62.75	4367.75	2774.98	174.22	
TREAS2%IL88	19757.74	1.03	20359.61	110.13	21758.21	1398.60	6.87	
6%FUND1993	36800.00	0.69	25494.41	76.88	28290.00	2795.59	10.97	
TRE5%86/89	23097.98	0.80	18381.38	81.63	18853.73	472.35	2.97	

TOTAL COST OF SHARES.....			14216.83					
TOTAL COST OF GILTS			64235.40					
TOTAL COST INVESTMENTS.....			78452.23					
PRESENT VALUE SHARES.....			25002.28					
PRESENT VALUE GILTS			68901.94					
TOTAL INV. VALUE.....			93904.22					
PROFIT ON SHARES			10785.45					

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PROFIT ON GILTS	4666.54	PERCENTAGE VALUES.	
TOTAL PROFIT.....	15451.99	%IN GILTS	73.37
PERCENTAGE ON GILTS PROFIT	7.26	%IN EQUITY	26.63
PERCENTAGE ON SHARES PROFIT...	75.86		
TOTAL PERCENTAGE....PROFIT	19.70		
F/T 5TH APRIL 1984	865.40		
PERCENTAGE OF CHANGE OF F/T...	12.66		

(equities) and gilts (government stocks). Examination of the example sheet will show that it is packed with useful data: what you have paid for each investment, how many units, the unit cost and most important the percentage of profit and loss and amount involved.

Let us work through the various entries. You will notice on the second line of Page 1 the Dow Index (USA), FT30 Index, All Share Index and the Exchange Rate. Each number must be inserted in a separate cell, as they will be referred to by formula in producing valuable statistics. These figures must be included when updating the sheet. This updating should be carried out every week or month depending on how active your portfolio is. All this information is given on the front page of the Financial Times or on the business pages of CEEFAX.

Next, refer to the line starting "EMF(CRES)." All labels are entered by first pressing the space bar — this distinguishes labels from data and formulas. Working along this row, enter the name of the holding and the quantity. Under the unit cost enter the formula D6/B6 and under the total cost enter the full cost including all expenses. The unit value is entered from the price columns of the daily paper.

It will save time if you enter your holdings in the order that they appear in the newspaper, but keep unit trusts and gilts grouped together. The formula to be entered under total value is B6*(E6/100), under profit F6-D6 and profit percentage G6/D6*100.

The profit figures are after all expenses, but of course to realise your profit you will be involved in selling costs. These are taken into account under the "SOLD" table on page 2 of the spreadsheet.

Now we can experience the marvels of "CALC RESULT" — we will never have to type these formulas again on this page! To repeat these formulas for each holding we just carry out the instructions to REPLICATE on each column in turn. Not only will the formula be repeated for each investment, but by asking the program to treat them as RELATIVE the reference numbers will be altered for its respective row.

After REPLICATING, you can edit any formula which refers to a share held in a currency other than sterling. Two examples of this are given in the case of Sony and Std Oil: these are entered from the newspaper in dollars. So the formula entered at position F14 is B14*E14/E2 and at F15, B15*E15/E2, the cell E2 being the value of the dollar, against sterling, on the second line of the sheet.

Statistics

The table so far will enable you to monitor your portfolio, so that you can see at a glance when you are making a reasonable profit. You can also use colour to highlight gilts that have been held over one year, so that a tax free profit can be taken.

We will now complete page 1 with statistics that can be used to ensure that we maintain a balanced portfolio.

The reference numbers given will of

course be for this particular portfolio. But it will act as a guide for your own sheet. On your sample sheet enter the following formulas:—

Total cost of shares SUM(D6:D15)
 Total cost of gilts SUM(D16:D18)
 Total cost of Investments..... D20+D21
 Present value of shares SUM(F6:F15)
 Present value of gilts..... SUM(F16:F18)
 Total inventory value D23+D24
 Profit on shares D23-D20
 Profit on gilts D24-D21
 Total profit D26+D27
 Percentage profit gilts D27/D21*100
 Percentage profit shares... D26/D20*100
 Total profit percentage..... D28/D22*100
 Percentage of change of FT.....
 (C2-C32)/C32*100
 Percentage of total gilts D24/D25*100
 Percentage of total equity.....
 D23/D25*100

At this stage I must make it clear that the above sheet can be constructed with a very simple, low cost spreadsheet on almost any computer. The only formula that may require alteration are those starting with "SUM". Reference to the manual will soon solve the problem. The method described in detail only applies to "CALC RESULT".

Sold Investments

In compiling this sheet Page 2, you must use a spreadsheet capable of handling the formula mentioned in an earlier paragraph.

Page 2						
SOLD84/85	DATE	19/1/85	PRESS REPLICATE 3 TIMES.			
COMPANY	NUMBER	COST	UNIT COST	TOTAL SALE	PROF/LOSS	%PROF/LOSS
DIPLOMA	500.00	55.00	0.11	2633.46	2578.46	4688.11
BP	2000.00	8700.00	4.35	10200.00	1500.00	17.24
STERLING	2000.00	649.00	0.32	1225.98	576.98	88.90
BRIT/TEL	800.00	400.00	0.50	737.44	337.44	84.36
BRIT/TEL	800.00	400.00	0.50	784.00	384.00	96.00
JAGUAR	500.00	825.00	1.65	1121.40	296.40	35.93
EXCO	500.00	2470.00	4.94	3074.93	604.93	24.49
		13499.00		19777.21	6278.21	46.51
CGT ALLOWANCE.....	5600		AMOUNT BELOW ALLOW.	0		
TAX RATE.. 0.3		GAIN SUBJECT CGT....	678.21	CGT.....	203.463	
*****	*****	*****	*****	*****	*****	*****

TAX FREE COMPANY	GAINS. NUMBER	COST	UNIT COST	TOTAL SALE	PROF/LOSS	%PROF/LOSS
TRES12786	17117.00	15000.00	0.88	18381.36	3381.36	22.54
TOTAL SALE		38158.57	GAINS BEFORE CGT....		9659.57	
TOTAL COST		28499.00	TAX BEFORE INDEXATION		203.46	
GROSS GAIN		9659.57	AFTER TAX GAINS.....		9456.11	
% GAIN		33.89	% AFTER TAX GAIN....		33.18	

GROSS INCOME		INCOME C/F		10055.29		
=====		AGE ALLOWAN		0.00		
NORWICH...	779.52	PERSONAL..		3155.00		
HAMBRO....	231.68	TAXABLE..		6900.29		
PENSION...	2836.60	TAX BRACKETS :-		TAX RATE.		
UK BANK 84	724.77	LESS THAN		15400.00	0.30	
\$ BANK 84.	318.12	NEXT		2800.00	0.40	
DIVIDENDS.	5164.60	NEXT		4900.00	0.45	
GROSS INCOM		10055.29	NEXT		7500.00	0.50
DEDUCTIONS		0.00	NEXT		7500.00	0.55
AFTER DED.		10055.29	ALL ABOVE		38100.00	0.60
AGE ALLOW.		3955.00	TOTAL INCOME TAX....		2070.09	
PERSONAL..		3155.00	CAPITAL GAINS TAX C/F		213.99	
FRINGE..		8100.00	TOTAL TAX .		2284.08	
TOP LEVEL		9300.00				
OVER FRINGE		1955.29				

The first part of this sheet is a record of all investments sold in this financial year. The formula will be the same as that used on Page 1. Profit is now calculated after all expenses and is given in row 14.

In order to simplify the tax calculations, the example is for a married man over 65, with no dependents. The only income is from investments and pensions. Once the principles are grasped, the sheet can be simply adapted for your own particular circumstances.

The first tax calculation is for capital gains tax. Enter this year's allowance of 5600 and the rate at 30%. Now enter the following formula:—

Amount below allowance.....
IF F14<C16THENF14-C16ELSE0
 Rate subject CGT
IF F14<C16THEN0ELSEF14-C16
 CGT E18*B18

Gilts held over twelve months are not subject to capital gains tax, so they must be entered in a separate section. Use the formula as outlined in Page 1. Then enter the following:—

Gains before CGT.....F14+F23
 CGT before indexation.....G18
 After Tax Gains G25-G26
 % after Tax GainsG27/C26*100
 Income C/F..... B43
 Age Allowance B43
 IF B43 > B48THEN0ELSEB45-B49*.6667
 Married Man Personal.....
IF B43<B48THEN0ELSEB46
 Taxable Income..... E30-(E31+E32)
 Gross Income..... SUM(B32:B37)
 After Deductions.....B39-B41
 Over Fringe.....IF B47THENB43-B47ELSE0

Under Income Tax Enter:—

IF E34<=D37THENE34*E37ELSE37*E37
 IF G37-D38>0THEND38*E38ELSEG37*E38
 IF G38-D39>0THEND39*E39ELSEG38*E39
 IF G39-D40>0THEND40*E40ELSEG39*E40
 IF G40-D41>0THEND41*E41ELSEG40*E41
 G41*E42

Total Income Tax.....SUM(F37:F42)
 Capital Gains TaxG18
 Total TaxF44+F46

In the column headed "Subject To Higher Tax" enter the following:—

IF E34-D37>0THENE34-D37ELSE0
 IF G37-D38>0THENG37-D38ELSE0
 IF G38-D39>0THENG38-D38ELSE0
 IF G39-D40>0THENG39-D40ELSE0
 IF G40-D41>0THENG40-D41ELSE0

The various allowances are entered from Tax Tables. These can be obtained from your tax office or any of the many tax books published every year. The sheet is updated at the beginning of the tax year, by reference to the newspaper the day following the budget.

Care must be taken to ensure that every entry is made in the same cell as shown in the example sheet. As a final check Page 1 uses ROWS 1 to 35 and Page 2 ROWS 1 to 49, both sheets use columns A to H.

A number of interesting and profitable exercises can now be carried out by altering income and capital gains figures and seeing the effect it could make to your tax bill.

Conclusions

In order to give CALC RESULT a severe test and to produce something useful, I have included a large amount of formula. It has been very difficult for me to fault the program, I even did a number of silly things, but it is so "user friendly" that the error messages soon put me right.

The only fault I could find, was that the saving and loading routine is rather slow. But this may not be entirely the fault of the program, as the CBM64 disk unit is not very fast. One of the reasons for the time taken in saving is that everything goes through the work disk and then onto the data disk. This does, however, save some time, as when you switch on the computer, with the cartridge inserted, the worksheet is displayed as it was when you switched off, without having to press any keys. The system also safeguards your work and provides more memory.

Using a computer to monitor my investments has resulted in very good profits over the last seven years. It could do the same for you.

CALC RESULT is distributed in the UK by Handic Software Ltd, 5 Albert Road, Crowthorne, Berkshire, RG11 7LT.

Editor's note: Any reference to Calc Result or Calc Result Advanced refers to either package.

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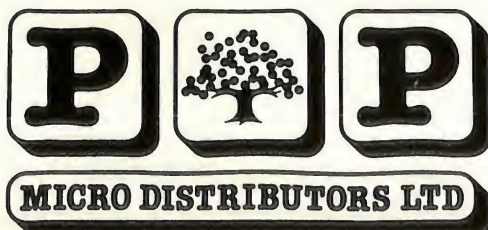
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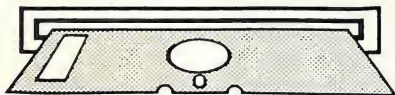
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